

Redescription of two Bornean species of the genus *Myrmarachne* (Araneae: Salticidae)

Takeshi Yamasaki

Graduate school of Science and Engineering, Kagoshima University, 1-21-35 Korimoto, Kagoshima, 890-0065 Japan
E-mail: k0468874@kadai.jp

Abstract — *Myrmarachne borneensis* G. Peckham & E. Peckham, 1907 and *M. shelfordii* G. Peckham & E. Peckham, 1907 are redescribed here based on type specimens. The lectotype of *M. shelfordii* is designated.

Key words — taxonomy, *Myrmarachne*, Salticidae, Borneo, redescription

Introduction

The genus *Myrmarachne* is a unique group of the family Salticidae, attracting great interests of scientists because of their ant-like morphology and behaviour. Around 80 species are recorded from Southeast Asia, and ten species from Borneo (Murphy & Murphy 2000; Prószyński 2010). *Myrmarachne borneensis* and *M. shelfordii* were described by G. Peckham & E. Peckham (1907) solely based on the male from Sarawak, Borneo. However, the drawings of several taxonomic characters are lacking from their original descriptions. Consequently, it is difficult to identify specimens as these two species without direct comparison with their type specimens. In the present paper, *M. borneensis* and *M. shelfordii* are redescribed based on their type specimens to present taxonomically important characteristics as well as some of these two species. Although the female is not known for both the species, the redescription of the male would be useful in identifying species, thus contributing to the clarification of *Myrmarachne* fauna in Borneo.

Materials and methods

All measurements are given in millimeter. Carapace length was measured from the base of anterior median eyes not including the lenses to the rear margin of carapace medially. Measured parts in eye area are shown in Fig. 1. The abbreviations used in this paper are as follows: ALE, anterior lateral eye; AME, anterior median eye; PLM, posterior lateral eye; PME, posterior median eye; pd, prodorsal; pv, proventral; rv, retroventral.

Myrmarachne borneensis G. Peckham & E. Peckham, 1907

Myrmarachne borneensis Peckham & Peckham, 1907 p. 604–605.

Specimen examined. Holotype (deposited in the Museum

of Comparative Zoology, Harvard University; Catalog # 20563), male, Sarawak, Borneo, G. W. Peckham & E. G. Peckham coll.

Measurements (holotype). Carapace length 3.45, width 2.45. Abdomen length 3.45, width 2.00. Chelicera length 1.83. Sternum length 2.00, width 0.83. Width of eye row I, 2.07; II 1.92; III 2.50. Length of ALE-PLM 1.73; ALE-PME 0.85. Eye size: AME 0.67, ALE 0.38, PME 0.11, PLM 0.43. Length of legs (tarsus + metatarsus + tibia + patella + femur = total): I, $0.80 + 1.60 + 3.65 + 1.75 + 3.70 = 11.5$; II, $0.30 + 1.23 + 1.50 + 1.10 + 2.06 = 6.19$; III, $0.60 + 1.72 + 1.60 + 0.98 + 2.13 = 7.03$; IV, $0.70 + 2.55 + 2.75 + 1.25 + 3.25 = 10.5$.

Male (Figs. 2–7). Carapace robust; surroundings of pos-

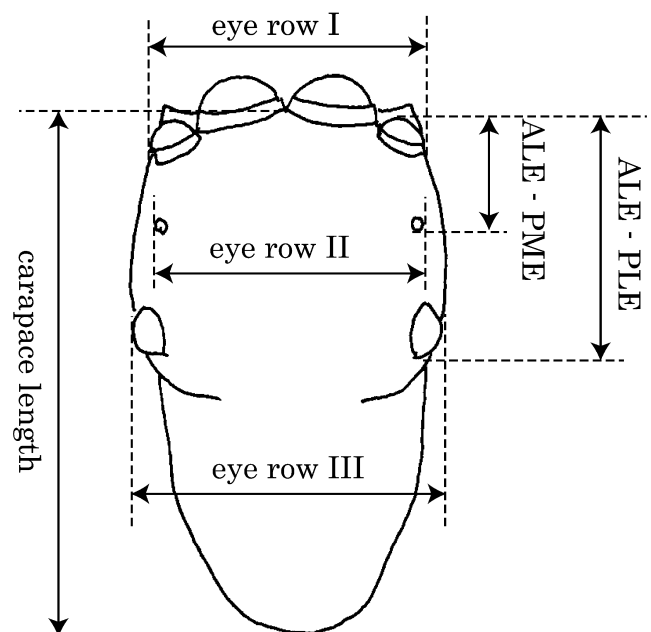


Fig. 1. Measured parts in eye area.

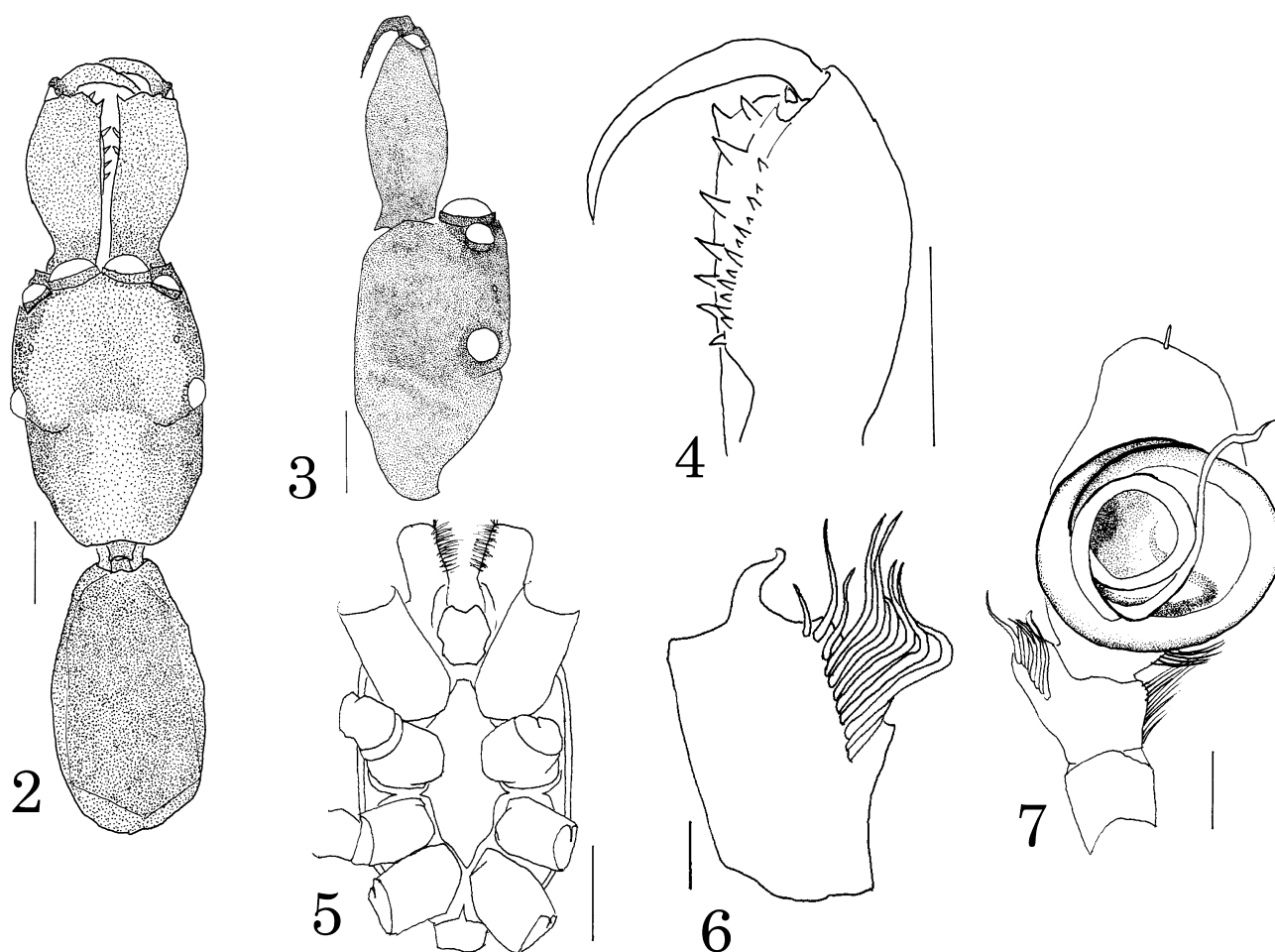


Fig. 2-7. *Myrmarachne borneensis* G. Peckham & E. Peckham, 1907, male holotype. 2, dorsal view; 3, carapace, lateral view; 4, left chelicera, ventral view; 5, carapace, maxillae, labium, coxae of legs and sternum, ventral view; 6, tibia of right palp, retrolateral view; 7, right palp, ventral view. (Scales. Figs. 2-5: 1 mm; Fig. 6: 0.1 mm; Fig. 7: 0.3 mm)

terior lateral eyes swollen; in dorsal view posterior edge of carapace slightly concaved; carapace in profile concave posteriorly (Figs. 2, 3). Chelicera short, apically with a spur on inner edge, and seven teeth on anterior margin and 12 small teeth on posterior margin of fang furrow (Fig. 4). Fang short, like a claw, with no apophysis (Fig. 4). Sternum overlapped by coxa I and coxa II (Fig. 5). Leg I long compared with other legs, femur I basally broad. Abdomen oval, covered with a scutum dorsally (Fig. 2).

Palp with thick long hairs like spines on tibial flange (Fig. 6); embolus coil diameter larger than width of cymbium (Fig. 7); One spine at the tip of cymbium (Fig. 7).

Number of spines on legs. Tibia I pv 8, rv 7 (rv 6 on right tibia I); metatarsus I pv 2, rv 2; tibia II pv 4, rv 3; metatarsus II pv 2, rv 2.

Coloration. Carapace dark brown. Chelicera dark brown with tip lighter. Maxilla, labium and sternum brown. Leg I: coxa, trochanter and tarsus whitish pale brown; other segments brown. Leg II: coxa brown; other segments whitish pale brown. Leg III brown. Leg IV: coxa and trochanter whitish pale brown; other segments brown. Abdomen grayish brown with scutum dark brown.

Remarks. This species is easy to recognize by the strong hairs like spines on palpal tibia. This condition is not known among other *Myrmarachne* species from Southeast Asia.

Although the total length of the body is mentioned as 8.5 mm in the original description, my measurement is below 7 mm. The reason for this is not clear.

Myrmarachne shelfordii G. Peckham & E. Peckham, 1907

Myrmarachne shelfordii Peckham & Peckham, 1907 p. 603-604.

Specimen examined. lectotype (deposited in the Museum of Comparative Zoology, Harvard University; Catalog # 23056), male, Sarawak, Borneo, G. W. Peckham & E. G. Peckham coll. The specimen is here designated as the lectotype.

Measurements (lectotype). Carapace length 2.35, width 1.73. Abdomen length 2.70, width 1.28. Chelicera length 1.87. Sternum length 1.33, width 0.53. Width of eye row II 1.50. Length of ALE-PLE 1.15; ALE-PME 0.57. Eye

size: AME 0.49, ALE 0.25, PME 0.09, PLE 0.29. Width of eye row I and III, and each segment of legs were not measured because carapace was broken and most leg segments were lost.

Male (Figs. 8–12). Carapace covered with sparse white

setae over the surface; height of head slightly larger than that of thorax; in profile groove between head and thorax shallow (Figs. 8, 9). Chelicera slender, with a stout apical spur in ventral view, and five or six teeth on anterior margin and nine teeth on posterior margin of fang furrow (Fig. 10).

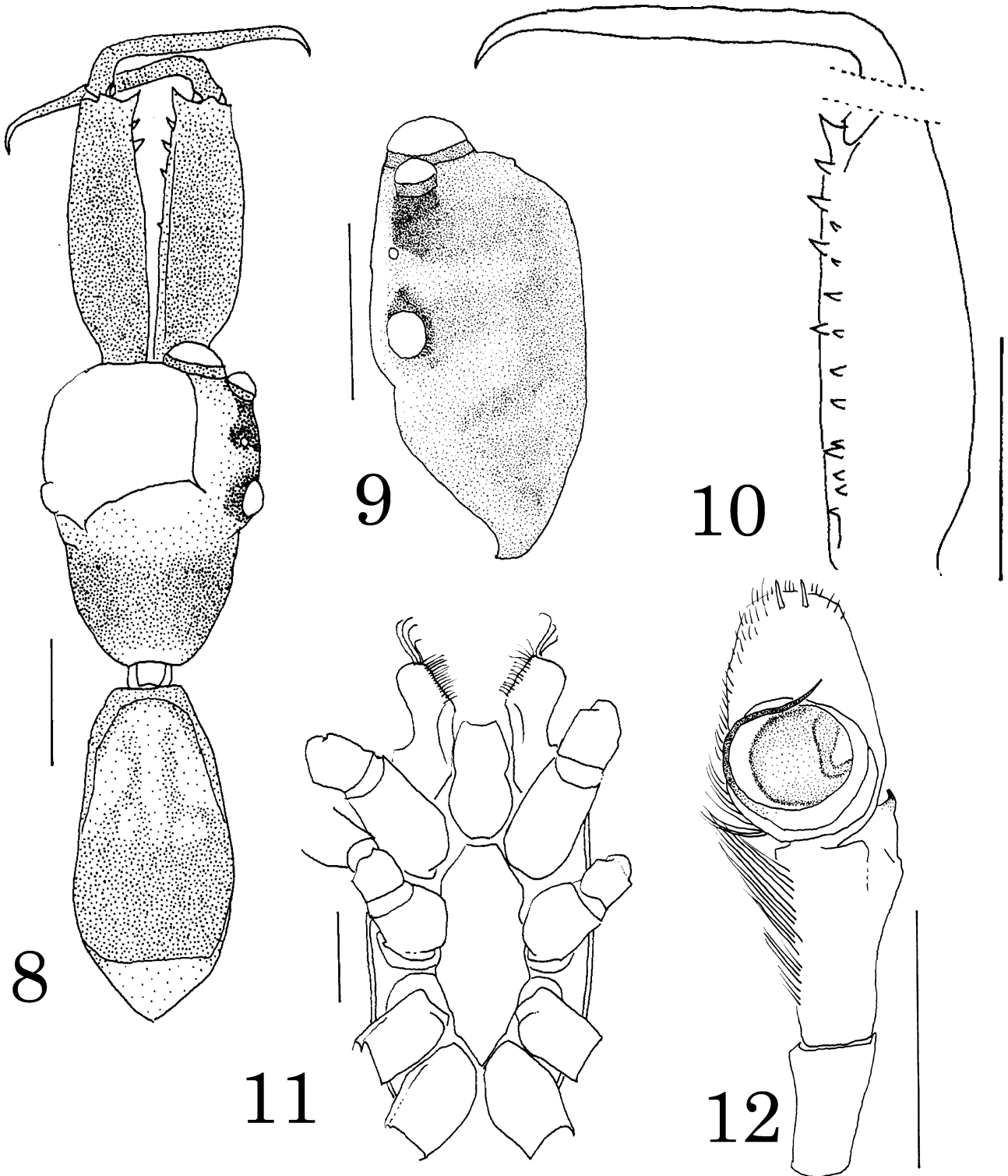


Fig. 8–12. *Myrmarachne shelfordii* G. Peckham & E. Peckham, 1907, male lectotype. 8, dorsal view; 9, carapace, lateral view; 10, left chelicera, ventral view; 11, carapace, ventral view; 12, left palp, ventral view. (Scales. Figs. 8–11: 1 mm; Fig. 12: 0.5 mm)

Fang with no apophysis (Fig. 10). Sternum broad; all coxae scarcely overlapped into sternum ventrally (Fig. 11). Abdomen pear-shaped with no constriction, covered with a scutum; white setae forming a transverse band in anterior part, the band running from dorsal part to lateral side; five pairs of fine hairs running longitudinally in dorsal view (Fig. 8).

Palp slender; embolus coil diameter as large as width of cymbium (Fig. 12). Two spines at the tip of cymbium (Fig. 12).

Number of spines on legs. Femur I pd 1; patella I rv 1; tibia I pv 6, rv 5 (six pairs in the original description); metatarsus I lost (two pairs in the original description); tibia II pv 2, rv 3 (3 pairs in the original description); metatarsus II pv 2, rv 2; femur III pd 1; femur IV pd 1.

Coloration. Carapace brown; head light colored; surroundings of eyes black. Chelicera and fang brown. Maxilla, labium and sternum whitish pale brown. Tibia I tinged with brown in anterior part. All femora brown. Other segments whitish pale brown. Abdomen whitish pale brown covered with a transparent brown scutum; posterior part of abdomen tinged with pale grey, it looks like a broad band (Fig. 8).

Designation of lectotype. *Myrmarachne shelfordii* was originally described based on two male syntypes. After original description, *M. shelfordii* has not been redescribed. One of the syntypes is deposited in the Museum of Comparative Zoology. Although the specimen bears a label of lectotype designation, the paper mentioning it was not found. I therefore designate the specimen as the lectotype of *M. shelfordii* to remove any future confusion. The other syntype which could not be found should automatically be the paralectotype.

Remarks. The number of spines on tibia I and II of the lectotype are slightly fewer than that of the original description. A possible explanation is that some spines have been lost thereafter. Another possibility is that the original description may have been mainly based on the other specimen which I could not find. Although prodorsal spines are not mentioned in the original description, the lectotype has them on each femur.

The single male (lectotype) of *M. shelfordii* resembles

the male specimen mentioned by Wanless (1978) as *M. exasperans* (G. Peckham & E. Peckham, 1892). Both are very similar to each other in the shape of carapace, the dentition of cheliceral teeth and the structure of palp. However, the white hairs forming lateral and submarginal bands on carapace and the white haired fringes margining the abdominal scutum in the male of "*M. exasperans*" are absent in the lectotype. Furthermore, Wanless (1978) did not mention the dorsal spines on legs which *M. shelfordii* has. Thus, I considered temporarily that these specimens belong to different species.

In his redescription of *M. exasperans*, which was originally described solely based on the female, the combination of the male and female is doubtful because the male is lacking in abdominal marking which is distinct in the females. This marking is unique for *M. exasperans* among the *Myrmarachne* species. It is expected that the male of *M. exasperans* has a similar abdominal marking because the coloration and marking are generally not different between the male and female of the same species in *Myrmarachne*. Clarifying the male and female combination in *M. exasperans* is a subject for future study.

Acknowledgments

I thank Ms. Laura Leibensperger (Museum of Comparative Zoology, Harvard University) for the loan of specimens and Prof. Seiki Yamane (Kagoshima University) for the advices of taxonomic study. This work was one of parts of "International training program to protect diversity of bioresources in the tropical area" in Kagoshima University, supported by the JSPS International Training Program (ITP).

References

- Murphy, F. & Murphy, J. 2000. An Introduction to the Spiders of Southeast Asia. Malaysian Nature Society, Kuala Lumpur, 625pp.
- Prószyński, J. 2010. Global Species Database of Salticidae (Araneae). <http://www.gsd-salt.miiiz.waw.pl/> (Version March 7th, 2010).
- Peckham, G. W. & Peckham, E. G. 1907. The Attidae of Borneo. Trans. Wis. Aca. Sci. Arts Lett. 15: 603–653.
- Wanless, F. R. 1978. On the identify of the spider *Emertonius exasperans* Peckham & Peckham (Araneae: Salticidae). Bull. Br. Mus. Nat. Hist. (Zool.), 33: 235–238.

Received June 29, 2010 / Accepted October 20, 2010